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JFACC Split, Forward, & Afloat – Positioning for Success

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature:

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JFACC CONUS, Split, or Afloat – Positioning for Success

Because air power has become the dominant weapon of warfare, command and control of U.S. military air power has come under scrutiny, especially since its joint employment in Operation Desert Storm. The Joint Air Operations Center (JAOC) has evolved as the tool for the Joint Forces Air Component Commander (JFACC) for directing air power assets during armed conflict. Modern communication capabilities and the revolution of military affairs called Network Centric Warfare provide three viable options in designing the command and control (C^2) structure for operational of air forces. The JFACC and JAOC can be located either in theater, back in CONUS, or a JFACC Forward/Rear split configuration combining the benefits of both previous arrangements.

This paper analyzes the pros and cons of a CONUS-based JFACC compared to the split JAOC concept and recommends the split command structure for future joint air operations. The JFACC Afloat, or Sea-Based JAOC, is discussed in the context of the split JAOC Forward/Rear arrangement. A sea-based JAOC is determined to be a sound C^2 method and is likely to occur in future major air operations.

"Militaries by their nature are hesitant to embrace unproven theories. As a result, they are usually slow to recognize new possibilities in operational art."

- Jeffery R. Barnett in *Future War*

JFACC Split, CONUS, and Afloat – Positioning for Success

Introduction

The thesis of this paper is that operational command and control (C^2) of U.S. military air power should evolve into a split architecture. This translates to placing the Joint Forces Air Component Commander (JFACC)* and a portion of his staff forward in theater with a large supporting cadre located in a protected rear area. The rear portion of the Joint Air Operations Center (JAOC) could be located at the headquarters of the theater Commander in Chief (CINC), or possibly in the continental United States (CONUS). Current communication technologies and the evolution of Network Centric Warfare (NCW) make the concept of a divided JFACC possible. Research indicates a split C^2 architecture is a reality for future operations even though it appears to conflict with a basic tenet of operational art, unity of command. This divided method of command and control can also be applied to other functional command organizations.

This paper will relate the history and formation of the JFACC concept, review some inter-service doctrinal conflicts, and describe the current roles and responsibilities of a JFACC. The forthcoming analysis will illustrate benefits of the split JAOC structure when compared to a single air operations center in CONUS. The JFACC Forward/Rear concept

* The acronym **JFACC** stands for *Joint Forces Air Component Commander* and represents the **person** in command. It is also commonly used to represent the entire JFACC organization and staff (see Figure 1). The term **AOC** stands for *Air Operation Center* and represents the **place** where command and control functions occur. It is usually modified to become a Joint (JAOC) or Combined (CAOC) air operation center. This paper will use the term **JAOC** throughout and as commonly used, it also includes the people who perform the functions inside the JAOC. Explanations for abbreviations are located in Appendix A.

will be analyzed in the context of lessons learned from past operations. A corollary to the split JFACC (Forward/Rear) command arrangement is that the forward elements might be optimized aboard a naval vessel as a JFACC Afloat. The sea-based JAOC will be discussed at length and show that the Navy has a significant role in the command and control of joint air power. The goal is to provide guidance to future joint force commanders and their staffs in order to streamline the decision making process at the outset of hostilities.

This paper will analyze two basic questions that are closely linked:

1. Why should a JFACC consider splitting the Joint Air Operation Center (JAOC) functional cells from one another geographically, by using a *JAOC Forward & JAOC Rear* concept? *and*

2. Is the decision by a Joint Forces Commander (JFC) to put his Joint Forces Air Component Commander (JFACC) on a ship a good idea?

By analyzing historical lessons learned from actual air operations, in the framework of established military precepts for command and control, the answers to both questions above will be shown to be "yes". The first question is the most difficult, but the choice to split the air operations center will be proved a viable option. The "yes" answer to the question concerning the JFACC afloat will be derived after two false paradigms are dispelled.

Background

Since Operation Desert Storm and the introduction of the JFACC concept, the selection, location, and staff composition of a Joint Forces Air Component Commander and his Joint Air Operations Center have been areas of debate and scrutiny. Among the elements of warfare, command and control is often subject to criticism after hostilities end because of

its central importance and the availability of accurate historical records. Since air power is considered by some to be the most dominant weapon of modern warfare, the efficient command and control of air power becomes a major factor in reviewing the success or failure of any major operation.

Air component commanders have controlled U.S. air power using various titles during and since WWII. Two early examples of joint and combined control of air power occurred in 1942 in North Africa[1] and in the Southwest Pacific during the Solomons campaign.[2] Winnefeld and Johnson's book *Joint Air Operations* illustrates some valuable lessons learned from observing the origin and function of limited air assets of the Cactus Air Force based on Guadalcanal. Air operations during the battle for the Solomons succeeded by combining air forces from the Navy, Marines, and Army Air Corps under one commander, although command of the air component changed between the services five times during the campaign.[3]

Today, U.S. military doctrine for the role and responsibilities of the JFACC are described in Joint Pub 3-56.1. The JFACC concept stems from the limited air power resources available and is prescribed in the 1986 defense reorganization initiatives.* The responsibilities of the USAF service component commander in theater and the theater air component commander are separate, but since they are interrelated, both responsibilities are *usually* assigned to the same Air Force commander.[4] However, any senior Air Force or Naval forces commander may be assigned the JFACC duties by the JFC. Joint Pub 3-56.1 states, "The JFC will normally assign JFACC responsibilities to the component commander

* "Unified Action Armed Forces (UNAAF)" is Joint Pub. 0-2, dated 1 December 1986, reflects the Defense Reorganization Act of 1986. This document makes clear the distinction between service component commanders and functional component commanders, thus setting up the JFACC concept.

having the preponderance of air assets and the capability to plan, task, and control joint air operations."[5] Below are the highlights of the JFACC's responsibilities:

JFACC RESPONSIBILITIES

(Joint Pub 3-56.1, page II-2)

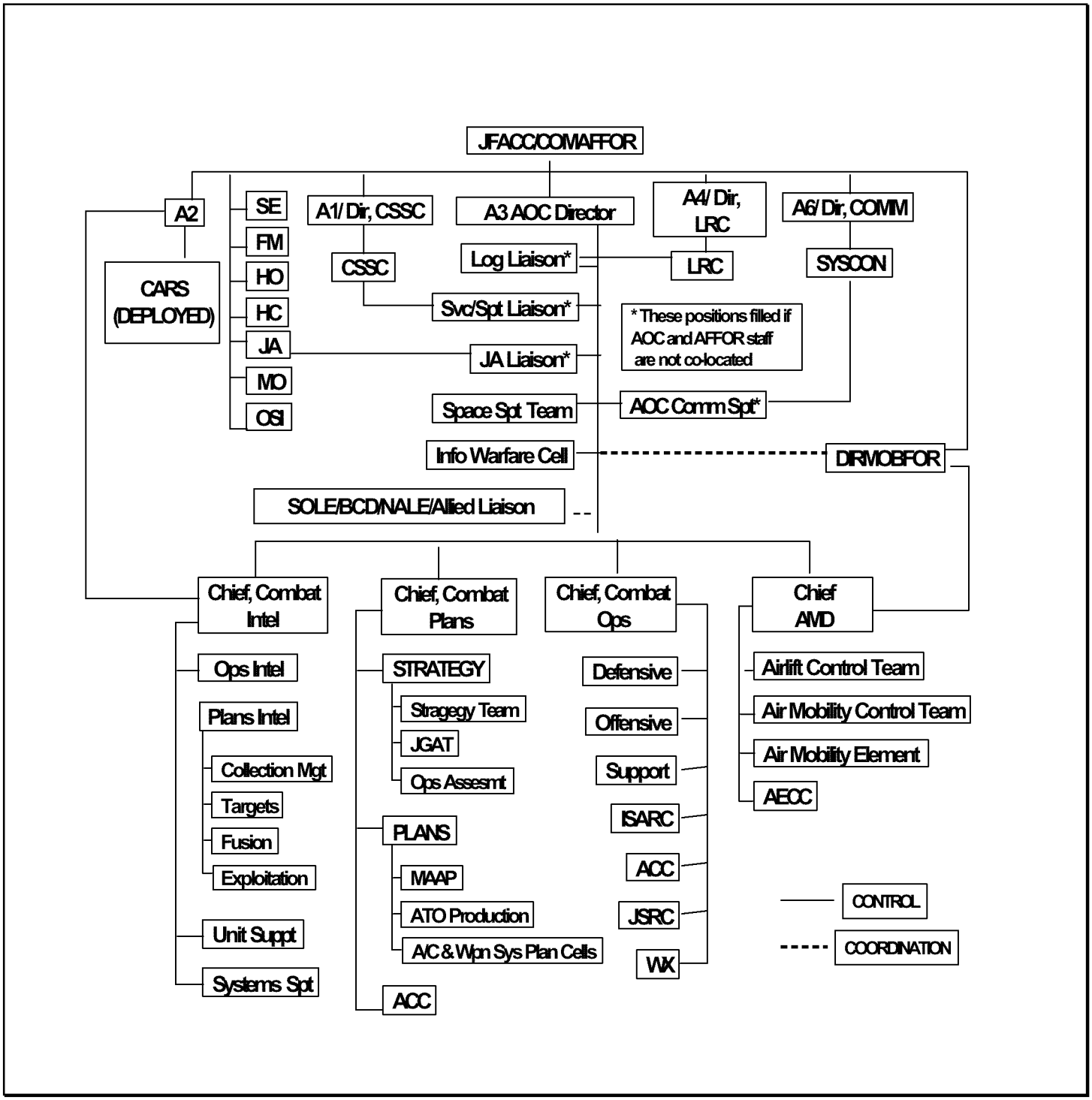
- **Develop a joint air operations plan**
- **Recommend apportionment of the air effort**
- **Provide centralized direction and tasking of air forces**
- **Control execution of joint air operations**
- **Coordinate air operations with the other components (land, maritime, special forces, etc.)**
- **Evaluate the results of air operations**
- **Perform or delegate the duties of the ACA (air control authority) and the AADC (area air defense commander)**

Figure 1: JFACC Responsibilities

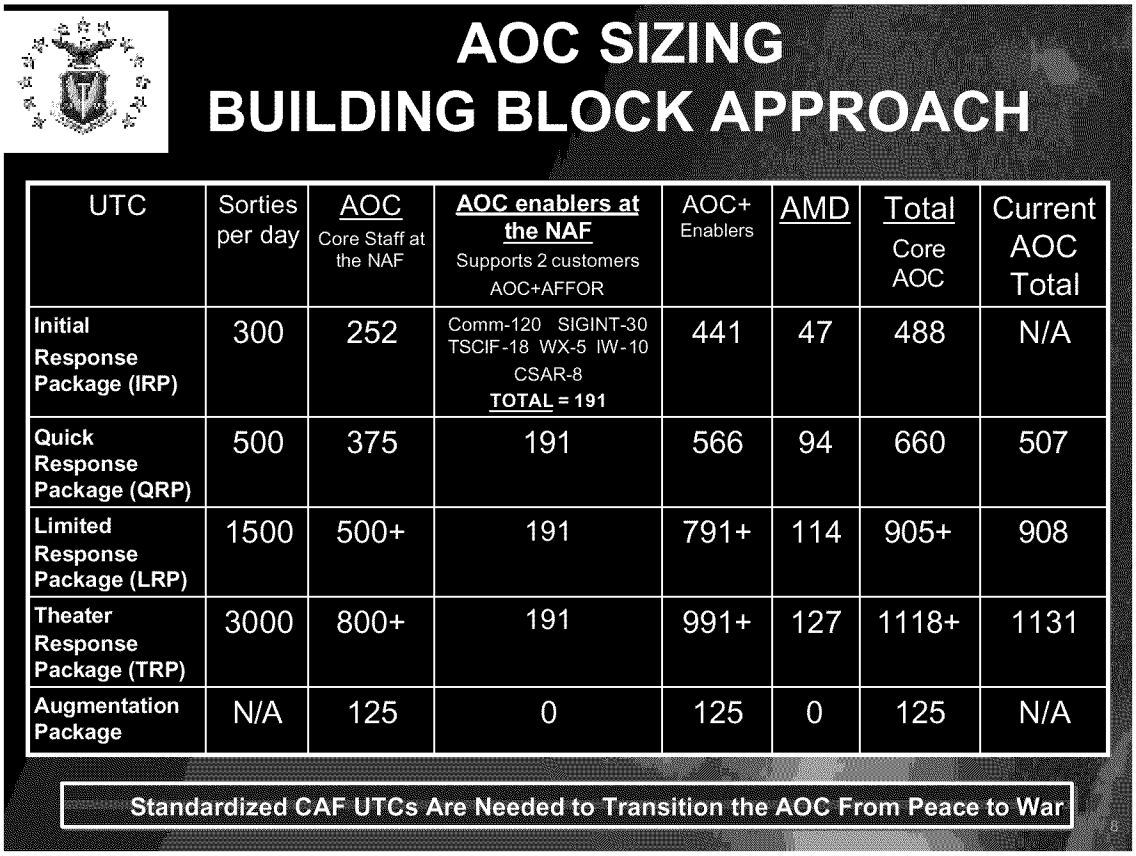
The JAOC Forward – JAOC Rear Concept

The JFACC staff has evolved to such a large size, nearly a thousand individuals, that it needs to be divided out of necessity. Joint Pub 3-56.1 diagrams how the JAOC is designed around 22 major functions, where a "cell" of trained personnel accomplishes each function.[6] The Combined Air Operations Center (CAOC) in Riyadh, Saudi Arabia during Desert Storm employed 880 personnel.[7] To show the structure and size of a modern USAF air operations center, the cells and functional areas of a notional JAOC are depicted on the next page in **Figure 2.** Each function within the JAOC is critical, but placing so many individuals under one roof during combat operations disregards basic elements of operational art such as force protection, and does not optimize available technology. Current Air Force Command and Control Training Integration Group (C2TIG) manning guidance requires 441[8] JAOC personnel for essential billets in the smallest version of a deployable JAOC called the "Quick

Figure 2: Notional JFACC Organization[9]



Response Package" (QRP). The QRP is capable of managing 500 daily combat sorties for 30 days. Proposed requirements from Commander, Pacific Air Force (PACAF), for more capable "Limited" (LRP) and "Theater" Response Packages (TRP) are listed in **Figure 3**.



UTC	Sorties per day	AOC Core Staff at the NAF	AOC enablers at the NAF Supports 2 customers AOC+AFFOR	AOC+ Enablers	AMD	Total Core AOC	Current AOC Total
Initial Response Package (IRP)	300	252	Comm-120 SIGINT-30 TSCIF-18 WX-5 IW-10 CSAR-8 TOTAL = 191	441	47	488	N/A
Quick Response Package (QRP)	500	375	191	566	94	660	507
Limited Response Package (LRP)	1500	500+	191	791+	114	905+	908
Theater Response Package (TRP)	3000	800+	191	991+	127	1118+	1131
Augmentation Package	N/A	125	0	125	0	125	N/A

Figure 3: Proposed JAOC manning table from PACAF brief[10]

The necessity of physically separating the JAOC's cells in future operations comes from two assumptions:

- Modern warfare and the dominance of air power require *all* the functions of a complete air operations center. In other words, all the JAOC personnel and functions are required to effectively employ air power, *and*
- The infrastructure to support a fully staffed JAOC (either ashore or afloat) is not present in probable theaters of operation.

These assumptions are not compatible with positioning the JFACC and the **entire** JOAC forward in theater as in previous major operations. This predicament leads to two possible solutions; the JAOC must be placed in its entirety in a rear area, *or* the JAOC must be split. The benefits of the split JFACC/JAOC option can best be advertised by analyzing the pros and cons of a single, CONUS-based JFACC.

Advantages of the Single, CONUS-based JFACC Concept

To simplify employment of air power in the face of geographic limitations, placing the air commander and his entire staff in CONUS is a modern option that echoes network centric warfare.[11] The complete JFACC staff could be located at established USAF AOCs, either at a CINC headquarters in theater or back in CONUS. Collocating the JFACC with the entire JAOC emphasizes unity of effort and unity of command. All the decisions regarding employment of air power will be down the hall from one another, under one roof. Colonel Jeffery Barnett (USAF, Ret.) supports this solution in his book *Future War - An Assessment of Aerospace Campaigns in 2010*, and states, "One major change in aerospace C^2 is needed immediately. The Joint Forces Air Component Commander (JFACC) for theater war should remain in CONUS."[12] He goes on to list seven advantages for this arrangement:

- No high value target forward in theater (JFACC and his staff)
- Better connectivity with strategic and specialized units
- Target planners have immediate access to all-source intelligence
- Better satellite data downlink capability
- Better access to databases and planning expertise, allowing for expeditious war-gaming of evolving scenarios

- More efficient use of the limited number of aerospace strategists and planners
- Easier standardization for CONOPS

It is important to note that the last six of these seven advantages also apply to the JFACC Forward/Rear concept.

Disadvantages of a Single, CONUS-based JFACC Concept

Effects on Leadership Caused by Physical Separation. The maritime component commander during Desert Storm, Admiral Mauz, felt he was unable to exert proper influence on the JFC because they were not collocated.[13] Likewise, a lesson learned from EXERCISE UNIFIED ENDEAVOR 98-1 was that "the advantages of locating the [JFACC] in close proximity to the JTF cannot be understated...."[14] Leadership via Video Teleconference (VTC) will supplant the JFACC's separation from the Joint Forces Commander (JFC) and other component commanders, assuming they will be located in theater. It can be argued that relying on VTCs might erode the many operational details and the nuances of interpersonal contact that ensure unity of effort by component commanders. Winnefeld and Johnson's *Joint Air Power* recommends, "The CINC and his functional air component commander should establish a close personal rapport with all the component commanders ...They should create an atmosphere in which the separate component commanders see cooperation and coordination as a necessary preliminary step in defeating the enemy."[15] This closeness might be difficult to establish or maintain using VTCs, which some have nicknamed "Hollywood Squares". Valuable insights and candid thoughts of commanders might be lost because participants never know who is (or is not) listening, both up and down the chain of command.

Additionally, two of the JFACC's primary responsibilities, allocating air assets and guiding the joint targeting board (JTB), might be hindered if directed from CONUS. The JFACC and certain functions of the JAOC need to be located in theater near the JFC. "Apportionment of effort and approval of target classes are not details" in which the CINC [JFC] should not be involved; these are vital aspects of the JFC's interest.[16] The JTB requires personal involvement by the JFC and all the component commanders, especially the JFACC, because his staff has much of the responsibility for target development. Lack of face-to-face access to the JTB's supporting cells is not optimal.

Personal leadership during combat is also important in the prevention of friendly fire casualties. The *fog of war* is well known to military professionals. One report on Desert Storm lists nine air-to-ground friendly fire engagements.[17] Finding the means for deconflicting friendly fire might prove even more difficult if the JFACC is removed from combat and is located thousands of miles away from the ground component commander. The ability of ground and air force commanders to speak directly, face-to-face, with personal knowledge of the arena in which the conflict is being waged is a necessity.

> "If officers desire to have control over their commands, they must *remain habitually with them*, industriously attend to their instruction and comfort, and in battle lead them well." *(emphasis added)*
> - Stonewall Jackson, Winchester, VA, November 1861.

Today's inventory dictates that short-range aircraft will conduct several of the required air missions. Probable mission types that will be based close to the front lines include combat air patrol (CAP), close air support (CAS), combat search and rescue (CSAR), special operations forces (SOF) and suppression of enemy air defense (SEAD). Long-range bombers and in-flight refueling aircraft are normally based in rear areas or in CONUS, but

they are less likely to require direct communication with operational commanders and ground forces for mission clarification.

Dependence on Bandwidth. National satellite communication (SATCOM) assets are already stretched thin. Operational military leaders understand that "bandwidth on demand" does not exist today as commonly believed. One example of this realization is that the JAOC in-brief for PACAF includes the limitations of the existing SATCOM structure. [18] Command and control of a major operation from CONUS requires an array of communications satellites. Increased data transfer on these satellites means existing traffic is sidelined until its priority is raised relative to the bandwidth available. Dependence on augmentation by commercial satellites adds other dimensions of information security. Most of the JAOC cells require SATCOM links for connectivity and are dependent on bandwidth availability. Command and control's dependence on bandwidth might become a critical vulnerability. Assumed reliability on a mix of aging and new space systems might transform one of our strengths into a weakness.

Insufficient Real-time Tactical Communication. JFACC doctrine states that the JFACC will normally be assigned the duties of the Area Air Defense Coordinator (AADC), and the Air Control Authority (ACA).[19] These functions will normally be executed forward in theater. Although the tasks of executing these responsibilities will be delegated, access to and immediate guidance from the operational commander is necessary and will be dependent upon several relay satellites. The JFACC's location in theater makes possible alternate line-of-sight connectivity with C^2 and airborne early warning (AEW) platforms.

Security. Collocation of an entire Joint Air Operation Center goes against two basic military principles of force protection and mobility. Military command and control centers,

especially an 880 person JAOC, are legitimate and lucrative targets for our enemies. Asymmetric attacks against our C^2 nodes are likely in future wars, including those based in CONUS. In January of 2002 during Operation Enduring Freedom, a fifteen year-old Al-Qaida sympathizer and amateur pilot flew a Cessna 172 dangerously close to CENTCOM headquarters in Tampa, Florida before a suicide collision with a nearby skyscraper. The likelihood of asymmetric attacks and the proliferation of weapons of mass destruction (WMDs) put at risk legitimate targets, such as major C^2 centers in CONUS, and their surrounding populations.

For smaller regional conflicts, physical security and force protection may not be an issue in CONUS, but communication paths might be vulnerable to attack. Very few nodes exist to download satellite data to our stateside commanders. If another nation's future is at stake, its people will become creative in finding weaknesses in our defense. Technology is not the focus of this paper, but common sense dictates a military of any era should not put all its eggs in one basket. Force dispersal is a proven means of protection.

Distraction. During combat air operations from bases in CONUS, warriors have the ability to go home after their shift to the distractions of pressing family issues. Illnesses, dentist appointments, soccer practice, and aging parents will distract the home-based war fighter. Lessons learned from EXERCISE BLUE FLAG 98-1 revealed "the tempo of operations and sense of urgency seemed to differ significantly between forward and rear locations."[20] Some military communities have already become "commuter warriors." Waging war by beeper, cell phones and Palm Pilots®, and the added frustrations of being sequestered on base are possible results of the CONUS-based JFACC.

Transitioning Command. Winnefeld and Johnson list as a lesson learned from past conflicts that command and control of operational air forces should transition from one commander to another as the situation warrants.[21] Their suggestion parallels joint doctrine in that the JFC should designate his air commander early in the planning process, but as forces arrive in the theater and enter combat, the planning should accommodate a shift of command from one commander to another if necessary to reflect the mixture of forces from various services as well as command and control capabilities. Joint Pub 3-56.1 dedicates two pages of specific guidance to enable a smooth transition of command from afloat to ashore or vice versa.[22] A fixed, CONUS-based JAOC does not anticipate this eventuality.

Analysis of the Split JFACC Forward/Rear Concept

The split JFACC Forward/Rear concept entails placing the JFACC and several JAOC cells forward in theater. The major functions most likely to be placed forward are Current Combat Operations, and the Guidance, Apportionment, and Targeting (GAT) cells.[23] The value of "reachback" was evident during the planning for Desert Storm. The JFACC's director of Combat Plans was supported by the "Black Hole" in Riyadh and by the USAF CHECKMATE organization back in Washington.[24] However, several arguments exist against splitting the JAOC. Instead of listing the advantages and disadvantages separately, each of the following paragraphs will include both pros and cons so that the reader may conclude whether or not each area of discussion is beneficial to command and control.

Security. The forward-based portion of the split JAOC will have to deal with hostile fire issues. If the JFACC is collocated with the JFC, other functional commanders, or combat forces, mutual security concerns will dovetail and the JFACC will benefit from this

economy of force. The smaller physical size of the forward JAOC elements will enable better mobility and secrecy.

Connectivity and Bandwidth. This element of the JAOC Forward/Rear concept will be the most difficult to overcome. Limitations on satellite bandwidth availability apply to the JFACC, even more so in theater. However, the JFACC's forward positioning might enhance connectivity with elements like quick reaction forces. (CAS, CSAR, SOF, etc.) Similarly, the dynamic in-flight re-tasking of long range bombers, reconnaissance aircraft, and tanking assets might be backed up or simplified by traditional line-of-sight networks and existing tactical relays in theater.

JAOC Staff Unity. Dividing many of the JAOC cells from the JFACC has potential to degrade internal staff functionality as compared to the "under one roof" approach. This risk is minimized by the placement of "current operations" cells with the JFACC. Forward placement of the JTB's supporting cells exemplifies JAOC elements benefiting from the JFACC Forward concept. Some functions may be dislocated back in CONUS, but the need for real-time communication with air mobility, Air Tasking Order (ATO) production, and Master Air Attack Plan (MAAP), and airspace management cells are not as critical.

Access to CONUS Resources. Although the JFACC himself may be limited in ability to "reachback" stateside, the JAOC Rear elements of his staff have full access. The air component commander may handle some details personally, but his staff will benefit the most by the connectivity of the JAOC rear portion.

Leadership and Delegation. By his forward positioning, the JFACC may be tempted to micromanage subordinates, especially in the ACA and AADC roles. For example, the JFACC will not normally direct missile defense assets, but by definition, he is

responsible for their correct employment. His presence forward might ensure a better grasp of the commander's intent to subordinates. Tactical commanders might enjoy more decision-making freedom once a personal command relationship is established with the boss.

Manpower Requirements. The establishment of two partial air operation centers (one forward, one rear) will increase overall personnel requirements.[25] However, by piggybacking on the JFC's support staff and service component commander's resources for items such as facilities, force protection, and logistics, this should prevent the ballooning of the JFACC staff size. The benefits of having two JAOCs are increased flexibility and preservation of operational plans and databases in case of hostile fire damage to one location.

It is difficult to compare a JAOC's workload from one major air operation to another. However, **Figure 4** gives some examples of sortie rates and duration of combat operations as measurements to approximate the scope and effort required of JAOC staff functions.

Figure 4: Examples of Recent Air Operations

Operation, Duration, days of combat	Total Sorties Flown	Avg. Daily Sortie	JFACC Location
El Dorado Canyon, Libya (1 day)	128	128	*see note
Desert Shield/Storm, Iraq-Kuwait (46)	128,886	2802	Riyadh, SA
Provide Comfort, N. Iraq, 1991 (113)	40,000	350	Incirlik, TU
Provide Comfort II, 1996 only (365)	4,500	12	Incirlik, TU
Allied Force, Kosovo (76 days)	38,004	500	Vicenza, IT
Tandem Thrust 1993	Unknown	40-360	Afloat/Ashore

*Planning and execution of Operation El Dorado Canyon was split. Admiral Kelso commanded Sixth Fleet naval air forces in the Mediterranean while USAFE directed Third Air Force assets originating from Great Britain. The F-111's out of Great Britain "chopped" to Admiral Kelso's control during the attack phase primarily for CSAR contingencies.

Analysis of the JFACC Afloat

Would a theater JFC actually want to put his JFACC aboard ship? Proponents of the JFACC Afloat concept argue that the Navy can host and support air component commanders

(including USAF commanders) when that becomes the best way to fight a war. The reluctance by both air force and naval officers to envision operational air commanders aboard ships stem from two misconceptions. Evaluating the false paradigms below will enable a thoughtful discussion of the JFACC afloat, and directly relate to the split JFACC concept.

False paradigm number one: *The Navy cannot adequately perform the functions of a JFACC aboard a floating naval ship*. This paradigm assumes that JFACC and JAOC personnel are drawn exclusively from organic, embarked naval assets. In contrast to this paradigm, the JFACC Afloat concept has been "validated" by several TANDEM THRUST exercises as far back as 1993. Lessons learned from many exercises indicate that Joint Task Force (JTF) air power can be managed from either a naval command ship (LCC) or an aircraft carrier (CV) for *small-scale operations*.[26] However, much truth exists within this paradigm for *medium and large operations*. The manning and equipment of today's fleet suggest shortages, which might prevent an embarked naval commander from effectively functioning as a JFACC for a large operation. Current hardware, especially the Theater Battle Management Core System (TBMCS) terminals used by JAOC cells aboard ship, are small in number, and are not designed for split operations.

The Navy's inability to singly provide all the needs for a JFACC afloat is not the important issue, however, the issue that matters is this – can the Navy *support* a JFACC (usually an USAF officer with a large joint staff) from a ship? Especially if the JFC directs his air commander to be located in theater, closer to the combat, an option to base ashore may not exist. Just as the Navy supports the Marines by acting as a chauffer for the deployed Marine Expeditionary Unit (MEU), and also supports the Army and Air Force through prepositioning and strategic mobility shipping, the Navy can also be of valuable assistance to

command and control of the air arm. The Navy can indeed *support* a JFACC, especially by embarking the forward portion of the JAOC. **Figure 5** reveals three levels of expected support to Commander, Pacific Air Forces (PACAF) based on the Navy's capability to control air power from *existing* ship configurations. The numbers for levels one and two coincide with observations from past peacetime exercises.[27]

	Level 1	Level 2	Level 3
JAOC Location	CV(N)	CV(N)	LCC/AGF
Augmentation Personnel Req'd	None	60	100
Notional Forces Available	1 CVBG, 1 ARG	2 CVBGs, 1 ARG	2-3 CVBGs, 1-2 ARGs 1-2 Air Force AEFs
Sorties per Day	180-200	400	800
TBMCS Workstations Required	7-9	7-9	6 TBMCS servers 18 workstations

Figure 5: Navy JAOC Afloat Capabilities Summary[28]

False paradigm number two: *The Navy wants to be the JFACC.* Granted, most flag officers (of all services) desire operational command, however, the Navy alone is simply not manned, equipped, nor trained to function as a JFACC with a fully capable Joint Air Operations Center for medium or large operations. Contrasting the actual desire to command the theater air war, naval commanders primarily want to insure consideration for naval responsibilities and capabilities are incorporated into the JFACC's decision-making process. The 1986 Goldwater/Nichols Act directs each service to optimize the employment of its assets in a joint fashion coordinated with the other services.[29]

Much of the **Air Force versus Navy** discussion over JFACC selection during the past decade has stemmed from the Navy's perception it was overlooked and under-utilized during Operation Desert Storm.[30] The second paradigm may have some truth to it, but the hard line

stance and perceived adversarial naval aviator ego is merely a means to an end—optimization of naval air power.

Why the Navy Quarrels with the Air Force.

Carrier forces have other contingent commitments that preclude subordination to land-based commanders including defense of the carrier and other maritime missions (since unhindered use of the seas is a prerequisite to theater operations). Additionally, complicated lines of authority over air power evolve during armed conflicts because carrier forces are usually first to arrive in theater and the last to leave. The Navy views the ensuing command transitions as unnecessary.[31] Likewise, the U.S. Air Force assumes "the primacy of the air campaign."[32] More confusion is interjected because both law and doctrine support the USMC's insistence upon the "indivisibility" of the Marine Air-Ground Task Force (MAGTF).

The bottom line is that naval commanders want freedom of action in the employment of their forces in support of the CINC's mission. But this point of view is not unique to the Navy: similar arguments have been advanced by Air Force officers in the past to avoid putting their forces under Navy control or under that of a regional CINC.[33] Many real differences in air power doctrine existed between the services during Desert Storm, and certain differences remain.[34]

JFACC Afloat – A Geographic Necessity

The necessity of placing the JFACC on a ship can be logically derived from two rhetorical, strategic planning questions:

- Are future warfare scenarios possible that will require conducting air operations with a preponderance of naval air forces, most likely from carrier battle groups? *and*
- Are future operations possible in areas of the world where land basing large command staffs are not advisable?

Scenarios are easily envisioned in which predominantly naval forces are positioned in a theater to conduct the first (and perhaps only) air operations in support of national policy. Whether the mission is presence, reconnaissance, or attack, deployed battle groups possess rapidly employable capabilities. Although the United States has a few air bases around the world with lengthy runways and hardened C^2 bunkers, they are not positioned in all quadrants of the globe where military action is likely as indicated in **Figure 6** below.

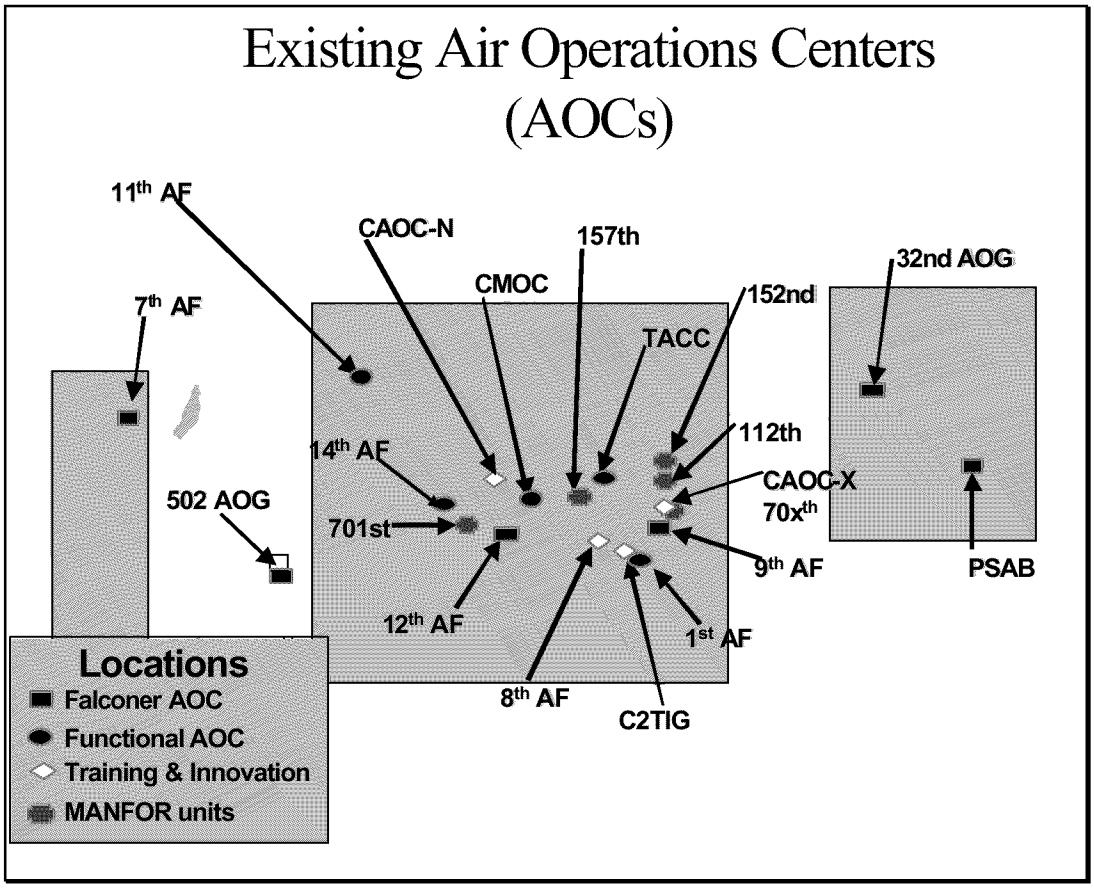


Figure 6: Existing Air Operations Centers (AOCs)[35]

Four major theaters lack the U.S. infrastructure to conduct air operations as our large, well-staffed headquarters have become accustomed to: Africa, South America, Southeast Asia, and the Southwest Pacific. According to the armed conflicts of the past decade listed on the OnWar.com website, fully 50% (44 of 87) of armed conflicts of the 1990s occurred in these four geographic areas.[36] These statistics do not include Southwest Asia, assuming that CENTCOM will continue to be sponsored by host nation, like Saudi Arabia, that will allow a sizable forward deployment within the region.

The likelihood of naval air forces being the preponderance of air power in a crisis combined with the limitations of existing military infrastructure illustrate the probability of major air operations being commanded from a U.S. Navy ship. The sizable organization to support a JFACC afloat, a complete JAOC, is cumbersome to embark. By splitting the JAOC and deploying only certain functional cells, the JFACC Afloat concept becomes more compatible with shipboard realities.

Conclusions

This paper attempted to identify consistent *lessons learned* concerning the location of the JFACC staff and the JAOC. Placement of the JFACC is a dynamic decision that relates to basic truths that apply to all conflicts, large and small, close and distant. The selection of the JFACC and the geographic positioning of the JAOC are two of the most important decisions a Joint Forces Commander (JFC) has to make during the early stages of an operation.

Technology has not evolved to the point where time-tested military maxims like "Always lead from the front" are passé. The military should openly embrace new

technologies and capabilities, but a conservative approach is prudent. Too much is at risk to rely too heavily upon new and unmatched capabilities. Excessive dependence on a secure centralized C^2 architecture is ill advised. Enemies will circumvent technological advances, discover our weaknesses, and level the playing field in time. At that point, falling back on military basics, especially leadership becomes paramount.

Differences in doctrine concerning command and control of air power exist in every service with an airplane. "If these issues are to be resolved at all, it is on the basis of either personal relationships among the senior commanders involved or by CINC direction."[37] One valuable precedent of the Gulf War is that "the Navy has discovered that it must incorporate joint procedures and systems if it is to be effective against the enemy and competitive as a provider of tactical air services.[38]

Overall, JFACC doctrine is sound. The mode of air control between services that has worked best to date is for one service component commander to act as the lead commander and take tactical control of sorties from the committed assets of the other services. This obviously requires a joint JFACC staff, not just Air Force or Navy.[39] Future armed conflicts may require unique and original C^2 structures and systems. The disadvantages of a JFACC in CONUS reveal that the split JFACC is a valid and more flexible option of command and control because it combines the benefits of connectivity from CONUS assets with the advantages of a forward based commander -- leadership.

Recommendations

1. JFACC doctrine should adopt the split JAOC structure as the norm. A split JAOC structure provides flexibility, and transition of command more easily while allowing the opportunity to combine into a single site later if that option proves optimal.

2. The Navy must invest substantial resources to develop joint command and control systems and hardware that is compatible with Air Force methods and equipment. This investment should include shipboard options to support not only the JFACC, but the JFC and other component commanders as well.

3. All the services must continue to fine-tune their command and control philosophies and doctrine for control of *joint* air power. One recommendation listed by Winnefeld and Johnson in *Joint Air Operations* states,

> [The Navy] must incorporate joint procedures and systems if it is to be effective against the enemy and competitive as a provider of tactical air services. Moreover, it must be prepared (in terms of command and control systems, command philosophy and doctrine, and hardware) to have its senior officers serve as JFACCs in future campaigns in which the maritime dimension is the most prominent.[40]

4. The Air Force must continue assuming the leadership position with regards to JFACC doctrine and systems development. The other services should follow their lead in supporting air power command and control initiatives.

5. JFACC doctrine and systems development should avoid over-dependence on "reachback" technology which might become an Achilles heal in future armed conflicts. Redundant, line-of-sight communications, and a commander's reliance on only one satellite (vice several) are prudent courses of action to ensure connectivity.

Appendix A: Abbreviations

AADC	Area Air Defense Commander
ACA	Air Control Authority
AEF	Air Expeditionary Force
AEW	Airborne Early Warning
AOC	Air Operations Center
ARG	Amphibious Ready Group
ATO	Air Tasking Order
C^2	Command and Control
C^2TIG	Command and Control Training Integration Group
CAP	Combat Air Patrol
CAS	Close Air Support
CAOC	Combined Air Operations Center
CENTCOM	U.S. Central Command
CINC	Commander in Chief
CONOPS	Concept of Operations
CONUS	Continental United States
CSAR	Combat Search and Rescue
CV(N)	Aircraft Carrier, fixed wing, (N) is nuclear powered
CVBG	Aircraft Carrier Battle Group
JAOC	Joint Air Operations Center
JFC	Joint Forces Commander
JFACC	Joint Forces Air Component Commander
JTF	Joint Task Force
JTB	Joint Targeting Board
LCC	Naval Command Ship
LRP	Limited Response Package
MAAP	Master Air Attack Plan
MAGTF	Marine Air Ground Task Force
MEU	Marine Expeditionary Unit
NCW	Network Centric Warfare
PACAF	Pacific Air Force
PACOM	U.S. Pacific Command
QRP	Quick Response Package
SATCOM	Satellite Communications
SEAD	Suppression of Enemy Air Defenses
SOF	Special Operations Forces
SSC	Small Scale Contingency
TBMCS	Theater Battle Management Core System
TRP	Theater Response Package
USAF	United States Air Force
VTC	Video Teleconference

Notes

[1] Deputy Chief of Staff, Plans and Operations, Headquarters U.S. Air Force, JFACC Primer (Washington, DC: 10 January 1994), 11.

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[3] Winnefeld and Johnson, 34.

[4] U.S. Air Force Command and Control Training Integration Group - AFC2TIG/A5 A2 Operation Studies Analysis Team (SAIC), Expeditionary Air Force Command and Control Reference Book (Hurlburt Air Force Base, FL: n.d.), 49.

[5] Joint Chiefs of Staff, Command and Control of Joint Air Operations, Joint Pub 3-56.1 (Washington, DC: 14 November 1994), II-2.

[6] Joint Chiefs of Staff, II-2.

[7] Lobdell, 12.

[8] Nelson, Robert, "PACAF DO In-Brief: Update on CONOPS for Sea-Based JAOC in the Pacific," (Unpublished Presentation Briefing, PACAF HQ, Honolulu, HI: 2002), 40.

[9] Twelfth Air Force (12AF), Air Force Forces (AFFOR). Air Operations Center (AOC) Standard Operating Procedures (SOP) (Davis Monthan Air Force Base, AZ: 31 August 2001), chap. 2, p. 10. <http://www.fas.org/man/dod-101/usaf/docs/aoc12af/index.html> [3 February 2002].

[10] Ibid.

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[12] Jeffery R. Barnett, Future War-An Assessment of Aerospace Campaigns in 2010 (Maxwell Air Force Base, AL: Air University Press, 1996), xxii.

[13] Lobdell, 21.

[14] Joint Center for Lessons Learned (JCLL), "Lesson Learned: EXERCISE UNIFIED ENDEAVOR 98-1," 8 December 1997, Joint Universal Lessons Learned System (JULLS) CD-ROM, (JULLS Number: 20841-04296).

[15] Winnefeld and Johnson, 147.

[16] Ibid.

[17] Ibid., 163.

[18] Nelson, 21.

[19] Joint Chiefs of Staff, Command and Control of Joint Air Operations, Joint Pub 3-56.1 (Washington, DC: 14 November 1994), II-4.

[20] Joint Center for Lessons Learned (JCLL), "Lesson Learned: EXERCISE BLUE FLAG 98-1," 5 December 1997, Joint Universal Lessons Learned System (JULLS) CD-ROM, (JULLS Number: 20550-47257).

[21] Winnefeld and Johnson, 147.

[22] Joint Chiefs of Staff, Command and Control of Joint Air Operations, Joint Pub 3-56.1 (Washington, DC: 14 November 1994), II-9.

[23] Nelson, 18.

[24] Deputy Chief of Staff, Plans and Operations, USAF Headquarters, JFACC Primer (Washington, DC: 10 January 1994), 11.

[25] Joint Center for Lessons Learned (JCLL), "Lesson Learned: EXERCISE BLUE FLAG 98-1," 5 December 1997, Joint Universal Lessons Learned System (JULLS) CD-ROM, (JULLS Number: 20550-47257).

[26] Joint Center for Lessons Learned (JCLL), "Lessons Learned: EXERCISE TANDEM THRUST 93," 26 July 1993, Joint Universal Lessons Learned System (JULLS) CD-ROM, (JULLS Number: 72829-93104).

[27] Ibid.

[28] Nelson, 39.

[29] Winnefeld and Johnson, 156.

[30] Deputy Chief of Staff, Plans and Operations, USAF Headquarters, JFACC Primer (Washington, DC: 10 January 1994), 11.

[31] Winnefeld and Johnson, 148.

[32] Winnefeld and Johnson, 154.

[33] Ibid., 148.

[34] Freitas, Marc E. and Thomas A. Parker, Joint Force Air Component Commander: A Common Sense Approach (Santa Monica, CA: Rand, 1994), 13.

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[37] Winnefeld and Johnson, 154.

[38] Ibid., 149.

[39] Ibid., 150.

[40] Ibid., 149.